WATER QUALITY DATA

A summary of test results is provided in the table below. The majority of the tables' data are from 2002 tests. If you need additional information or service, please feel free to call our water quality experts at 428-6680 during normal business hours.

Terms and abbreviations used below:

- **Maximum Contaminant Level** (MCL): the highest level of a contaminant set that is allowed in drinking water. EPA sets MCLs as close to the MCLGs as feasible using the best available treatment technology.
- **Action Level** (AL): the concentration of a contaminant prescribed by the EPA which, when exceeded, triggers treatment or other requirements which a water system must follow.
- **NTU**: nephelometric turbidity units
- **ppm**: parts per million or milligrams per liter
- **pCi/L**: picocurries per liter (a measure of radiation)
- **n/a**: not applicable
- **nd** not detected at testing limit

Contaminant	MCL	Hemlock Lake			Lake Ontario		
		# tests	avg	range	# tests	avg	range
Inorganic contaminants							
Aluminum (ppb)	n/a	18	40	ND-140	4	92	34-240
Antimony (ppb)	6	1	not found		4	not found	
Arsenic (ppb)	50	1	not found		4		ND- 1
Barium (ppm)	2.00	1	0.016		4	.022	0.22 - 0.23
0.23Berylium (ppb)	4	1	not found		4	not found	
Cadmium (ppb)	5	1	not found		4	not found	
Calcium (ppm)	n/a	20	25	23-27	4	35	35 - 36
Chromium (ppb)	100	1	not found		4	not found	
Copper (ppm) (2000 data)	AL=1.3	50	.18 =90%tile	none > AL	50	0.077=90%tile	
Cyanide (ppb)	200	1	not found		4	not found	
Fluoride (ppm)	2.2	1069	0.87	0.6-1.22	2156	1.0	0.2 - 1.4
Iron (ppb)	300	1	not found		4	not found	
Lead (ppb)(2000 data)	AL=15	50	6= 90%tile	none > AL	50	3 = 90%tile	
Magnesium (ppm)	n/a	1	5.8		4	8.95	8.7 - 9.2

Contaminant	MCL	Hemlock Lake			Lake Ontario		
		# tests	avg	range	# tests	avg	range
Manganese (ppb)	300	1	not found		4	not found	
Mercury (ppb)	2	1	not found		4	not found	
Nickel (ppb)	n/a	1	1.2		4	not found	
Nitrate (ppm)	10	12	0.07	ND-0.18	4	0.25	0.3 - 0.4
Nitrite (ppb)	1000	1	not found		4	not found	
Potassium (ppm)	n/a	1	1.3		1	1.7	
Selenium (ppb)	50	1	not found		4	not found	
Silver (ppb)	100	1	not found		4	not found	
Sodium (ppm,)	n/a	1	14		4	11	
Sulfate (ppm)	250	4	20.5	20-21	4	28	27-30
Thallium (ppb)	2	1	not found		4	not found	
Zinc (ppb)	5000	1	not found		4	not found	
Alkalinity (ppm)	n/a	22	64	59-70	4	83	83-84
Chlorides (ppm)	250	3	27	27-28	4	22	21-22
Color	color unit	11	3	2.5-5	4	3	ND-5
pH	pH unit	1957	7.6	6.8-8.3	365	7.4	6.8-7.7
Total Hardness (ppm) (2001 data)	n/a	1	84		4	126	125-127
Total Organic Carbon (ppm)	n/a	1	2.5		4	1.7	1.6-1.9
Turbidity - entry point (NTU)	**	2190	0.08	0.03-0.22	2186	0.08	0.06 - 0.23
Turbidity distribution system (NTU)	***	2285	0.17	0.05-3.3			
Chlorine residual - entry point (ppm)	****	2190	0.92	0.2-1.2	8668	1.24	0.87 - 1.7
Chlorine residual - distribution (ppm)	*****	2331	0.68	ND-1.75			
Coliform - entry point (% positive)	n/a	363	0				
Coliform - distribution system (% pos)[1]	5%	1991	0.4	0 - 2.2			

Contaminant	MCL	Hemlock Lake			Lake Ontario		
		# tests	avg	range	# tests	avg	range
Asbestos (million fibers/L)	7	1(1999)	not found				
Volatile Organics (ppb)							
Benzene	5	1	not found		4	not found	
Bromobenzene	5	1	not found		4	not found	
Bromochloromethane	5	1	not found		4	not found	
Bromomethane	5	1	not found		4	not found	
n-Butylbenzene	5	1	not found		4	not found	
Carbon tetrachloride	5	1	not found		4	not found	
Chlorobenzene	5	1	not found		4	not found	
Chloroethane	5	1	not found		4	not found	
Chloromethane	5	1	not found		4	not found	
2-Chlorotoluene	5	1	not found		4	not found	
4-Chlorotoluene	5	1	not found		4	not found	
dibormomethane	5	1	not found		4	not found	
1,2-Dichlorobenzene	5	1	not found		4	not found	
1,3-Dichlorobenzene	5	1	not found		4	not found	
1,4-Dichlorobenzene	5	1	not found		4	not found	
Dichlorodifluoromethane	5	1	not found		4	not found	
1,1-Dichloroethane	5	1	not found		4	not found	
1,2-Dichloroethane	5	1	not found		4	not found	
1,1-Dichloroethene	5	1	not found		4	not found	
cis-1,2-Dichloroethene	5	1	not found		4	not found	
trans-1,2-Dichloroethene	5	1	not found		4	not found	
1,2-Dichloropropane	5	1	not found		4	not found	
1,3_Dichloropropane	5	1	not found		4	not found	
2,2_Dichloropropane	5	1	not found		4	not found	
1,1-Dichloropropene	5	1	not found		4	not found	
cis-1,3-Dichloropropene	5	1	not found				

Contaminant	MCL	Hemlock Lake			Lake Ontario		
		# tests	avg	range	# tests	avg	range
trans-1,3-Dichloropropene	5	1	not found		4	not found	
Ethylbenzene	5	1	not found		4	not found	
Hexachlorobutadiene	5	1	not found		4	not found	
Isopropylbenzene	5	1	not found		4	not found	
p-Isopropyltoluene	5	1	not found		4	not found	
Methylene chloride	5	1	not found		4	not found	
Naphthalene	n/a	n/a			4	not found	
n-Propylbenzene	5	1	not found		4	not found	
Styrene	5	1	not found		4	not found	
1,1,1,2-tetrachloroethane	5	1	not found		4	not found	
1,1,2,2-Tetrachloroethane	5	1	not found		4	not found	
Tetrachloroethene	5	1	not found		4	not found	
Toluene	5	1	not found		4	not found	
1,2,3-Trichlorobenzene	5	1	not found		4	not found	
1,2,4-Trichlorobenzene	5	1	not found		4	not found	
1,1,1-Trichloroethane	5	1	not found		4	not found	
1,1,2-Trichloroethane	5	1	not found		4	not found	
Trichloroethene	5	1	not found		4	not found	
Trichlorofluoromethane	5	1	not found		4	not found	
1,2,3-Trichloropropane	5	1	not found		4	not found	
1,2,4-trimethylbenzene	5	1	not found		4	not found	
1,3,5-trimethylbenzene	5	1	not found		4	not found	
Xylenes	5	1	not found		4	not found	
Vinyl chloride	5	1	not found		4	not found	
MTBE	n/a	1	not found				
Organics, Pesticides, PCBs (ppb)							
1,2-Dibromo-3-Chloropropane	0.2	1	not found		4	not found	
1,2-Dibromoethane (EDB)	0.05	1	not found		4	not found	

Contaminant	MCL	Hemlock Lake			Lake Ontario		
		# tests	avg	range	# tests	avg	range
2,4,5-TP (Silvex)	10	1	not found		4	not found	
2,4-D	50	1	not found		4	not found	
3-Hydroxycarbofuran	50	1	not found		1	not found	
Alachlor	2	1	not found		1	not found	
Aldicarb	3	1	not found		1	not found	
Aldicarb Sulfone	2	1	not found		1	not found	
Aldicarb Sulfoxide	4	1	not found		1	not found	
Aldrin	50	1	not found		4	not found	
Atrazine	3	1	not found		4	not found	
Benzo(a)pyrene	0.2	1	not found		4	not found	
Bis(2-Ethylhexyl)Phthalate	6	1	not found		4	not found	
Butachlor	50	1	not found		4	not found	
Carbaryl	50	1	not found		1	not found	
Carbofuran	40	1	not found		1	not found	
Dalapon	50	1	not found		1	not found	
Di(2-Ethylhexyl) Adipate	50	1	not found		4	not found	
Dicamba	50	1	not found		1	not found	
Dieldrin	50	1	not found		4	not found	
Dinoseb	7	1	not found		1	not found	
Dioxin	0.03	n/a			1	not found	
Diquat	20	n/a			1	not found	
Endothall	50	n/a			1	not found	
Endrin	2	1	not found		4	not found	
Glyphosate	50	n/a			1	not found	
Heptachlor	0.4	1	not found		4	not found	
Heptachlor Epoxide	0.2	1	not found		4	not found	
Hexachlorobenzene	1	1	not found		4	not found	
Hexachlorocyclopentadiene	50	1	not found		4	not found	

Contaminant	MCL	Hemlock Lake			Lake Ontario		
		# tests	avg	range	# tests	avg	range
Lindane	0.2	1	not found		4	not found	
Methomyl	50	1	not found		1	not found	
Methoxychlor	40	1	not found		4	not found	
Metolachlor	50	1	not found		4	not found	
Metribuzin	50	1	not found		4	not found	
Oxamyl	50	1	not found		1	not found	
PCB's Total	0.5	1	not found		4	not found	
Pentachlorophenol	1	1	not found		4	not found	
Pichloram	50	1	not found		1	not found	
Propachlor	50	1	not found		4	not found	
Simazine	4	1	not found		4	not found	
Total Chlordane	2	1	not found		4	not found	
Toxaphene	3	1	not found		1	not found	
4,4'-DDT	n/a	1	not found		4	not found	
Mirex	n/a	1	not found		4	not found	
Disinfectant Byproducts (ppb)							
Total THMs	80	16	30	19-47	16	35	16-66
Total HAAs	60	16	28	8-51	16	12	4-22
Unregulated Contaminants Monitoring (ppb) 2001 data							
2,4-dinitrotoluene	n/a	4	not found		4	not found	
2,6- dinitrotoluene	n/a	4	not found		4	not found	
Acetochlor	n/a	4	not found		4	not found	
DCPA mono-acid degradate	n/a	4	not found		4	not found	
DCPA di-acid degradate	n/a	4	not found		4	not found	
4,4'-DDE	n/a	4	not found		4	not found	
EPTC	n/a	4	not found		4	not found	
Molinate	n/a	4	not found		4	not found	
Nitrobenzene	n/a	4	not found		4	not found	

Contaminant	MCL	Hemlock Lake			Lake Ontario		
		# tests	avg	range	# tests	avg	range
Perchlorate	n/a	4	not found		4	not found	
Terbacil	n/a	4	not found		4	not found	
Radionuclides (pCi/L)							
Gross alpha (2001)	15	1	not found		1(1999)	not found	
Gross Beta (2001)	50	1	2.9 (+/-2.5)		1(1999)	not found	

Occassionally the Bureau has the opportunity to partner with an outside agency to conduct water quality studies. The purpose of these partnerships has been to further our understanding of the water quality in the lakes, treatment process and distribution system. In the table below, data on Hemlock Lake water, before treatment, are presented. The sample was collected in late 2001 and was analyzed by the United States Geologial Survey for a broad range of contaminants including pesticides, industrial chemicals, drugs, and other wastewater related compounds.

Compound	Method Detection limit	Value (ug/L)	Likely source
Bromacil	0.5 ug/L	not found	pesticide
Prometon	0.5 ug/L	not found	pesticide
Anthracene	0.5 ug/L	not found	pesticide, PAH
Fluoranthene	0.5 ug/L	not found	industrial chemical
Isophorone	0.5 ug/L	not found	industrial chemical
Naphthalene	0.5 ug/L	not found	industrial chemical
Pentachlorophenol	0.5 ug/L	not found	industrial chemical
Phenanthrene	0.5 ug/L	not found	industrial chemical
Phenol	0.5 ug/L	not found	industrial chemical
Pyrene	0.5 ug/L	not found	industrial chemical
Tetrachloroethylene	0.5 ug/L	not found	industrial chemical
1,4-Dichlorobenzene		0.029 ug/L estimated	deodorizer
Dichlorvos	1.0 ug/L	not found	pesticide
Chlorpyrifos	0.5 ug/L	not found	pesticide
Metolachlor		0.0096 ug/L estimated	pesticide
Diazinon	0.5 ug/L	not found	pesticide

Compound	Method Detection limit	Value (ug/L)	Likely source
Caffeine	0.5 ug/L	not found	drug
Metalaxyl	0.5 ug/L	not found	pesticide
Diethoxyoctylphenol	0.5 ug/L	not found	industrial chemical
Monoethoxyoctylphenol	1 ug/L	not found	industrial chemical
Cotinine	1 ug/L	not found	nicotine metabolite
17-alpha-ethynyl estradiol	5 ug/L	not found	ovulation inhibitor
17-beta estradiol	5 ug/L	not found	reproduction hormone
1-Methylnapthalene	0.5 ug/L	not found	industrial chemical
2,6 -Dimethylnapthalene	0.5 ug/L	not found	industrial chemical
2-Methylnaphthalene	0.5 ug/L	not found	industrial chemical
3-beta-coprostanol	0.5 ug/L	not found	fecal steroid
Skatole	1 ug/L	not found	hormone
BHA	5 ug/L	not found	antioxidant
4-Cumylphenol	1 ug/L	not found	detergent metabolite
4-Octylphenol	1 ug/L	not found	detergent metabolite
4-Tert-Octyphenol	1 ug/L	not found	industrial chemical
5-Methyl-1H-Benzotriazole	2 ug/L	not found	antioxidant
Acetophenone	0.5 ug/L	not found	fragrance
Acetyl hexamethyl tetrahydro naphthalene	0.5 ug/L	not found	fragrance
Anthraquinone	0.5 ug/L	not found	pesticide
Benzophenone	0.5 ug/L	not found	cosmetic
Beta-Sitosterol	2 ug/L	not found	plant sterol
Bisphenol A	1 ug/L	not found	plasticizer
Camphor	0.5 ug/L	not found	drug / pesticide
Carbazole	0.5 ug/L	not found	industrial chemical
Cholesterol		0.26 ug/L estimated	plant/animal steroid

Compound	Method Detection limit	Value (ug/L)	Likely source
D-Limonene	0.5 ug/L	not found	fragrance
Equilenin	5 ug/L	not found	estrogen replacement
Hexahydrohexamethyl cyclopentabenzopyran	0.5 ug/L	not found	fragrance
Indole	0.5 ug/L	not found	drug
Isoborneol	0.5 ug/L	not found	drug
Cumene	0.5 ug/L	not found	industrial chemical
Isoquinoline	0.5 ug/L	not found	drug
Menthol	0.5 ug/L	not found	fragrance
Methyl Salicylate	0.5 ug/L	not found	drug
DEET	0.5 ug/L	not found	pesticide
Nonylphenol, Diethoxy	5 ug/L	not found	detergent metabolite
Para-cresol	1 ug/L	not found	fragrance
para-nonylphenol	5 ug/L	not found	detergent metabolite
Stigmastanol	2 ug/L	not found	plant sterol
Tri (2-chloroethyl) phosphate	0.5 ug/L	not found	fire retardant
Tri (dichlorisopropyl) phosphate	0.5 ug/L	not found	fire retardant
Tri Butylphosphate	0.5 ug/L	not found	industrial chemical
Triclosan	1 ug/L	not found	detergent
Triethyl citrate	0.5 ug/L	not found	industrial chemical
Triphenyl phosphate	0.5 ug/L	not found	flame retardant
Tris (2-butoxyethyl phosphate	0.5 ug/L	not found	plasticizer
Estrone	5 ug/L	not found	reproductive hormone

Table footnotes:
1) In 1993, the New York State Department of health granted the city what is known as a biofilm variance to the total coliform bacteria MCL. Biofilm refers to a layer of bacteria

that can be found on water pipe surfaces. A biofilm variance is only allowed where the coliform bacteria recovered from a water system are identified as non-disease causing environmental strains originating from the pipeline biofilm and not from an external source of contamination. The City of Rochester is one of several large suppliers nationwide holding a bilfilm variance.

** = 95% of measurements within a given month must be less than 0.5 ntu.

*** = Average of monthly distribution system samples must be less than 5.0 ntu.

**** = Water entering the distribution must have a chlorine residual greater than 0.2 and less than 4 ppm.

***** = 95% of monthly distribution system samples must have a measurable chlorine residual.

Note: Total Hardness is also expressed in grains per gallon. The grains of hardness in the Onatario and hemlock supplies are 7.6 & 5.6, respectively.